



RAILROAD COMMISSION OF TEXAS

OFFICE OF GENERAL COUNSEL

OIL AND GAS DOCKET NO. 06-0248748

THE APPLICATION OF CHESAPEAKE OPERATING, INC. TO CONSIDER
PERMANENT GAS WELL CLASSIFICATION FOR ALL WELLS ON THE CRUMP GAS
UNIT IN THE BETHANY, EAST (COTTON VALLEY) FIELD, PANOLA COUNTY, TEXAS

Heard by: Donna K. Chandler, Technical Examiner

Hearing Date: October 5, 2006

Appearances:

Representing:

Cary McGregor
Bill Spencer

Chesapeake Operating, Inc.

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Chesapeake Operating, Inc. requests that all wells on its Crump Gas Unit in the Bethany, East (Cotton Valley) Field be permanently classified as gas wells.

The application is unopposed and the examiner recommends approval of the permanent gas well classifications.

DISCUSSION OF EVIDENCE

The Crump Gas Unit is a 666 pooled unit in the Bethany, East (Cotton Valley) Field. Chesapeake has four wells completed on the Crump Unit to date: the Nos. 6, 7, 8, and 9. The No. 6 was completed in September 2005 and classified as a gas well based on Form G-5. The No. 9 was completed in March 2006 and was also classified as a gas well based on Form G-5. The No. 7 was also completed in March 2006. Form G-5 for the No. 7 did not meet the criteria for gas well classification and Chesapeake submitted a compositional analysis indicating that the mole percent C_{7+} was 3.5%. The Commission administratively classified the well as a gas well based on that analysis. This approval was apparently based on a Commission memo dated March 16, 2006 which allows staff to administratively classify a well as a gas well if a compositional analysis demonstrates that the mole percent

of C_{7+} (heptanes plus) in a fluid sample is less than 11%.

The Crump Gas Unit No. 8 was completed in June 2006. Form G-5 for this well did not meet the criteria for gas well classification. Chesapeake submitted a compositional analysis for this well indicating that the mole percent C_{7+} was 4.397%. However, the Commission declined to administratively classify the well as a gas well. Chesapeake then filed this hearing application.

The data on Form G-5 for Well Nos. 7 and 8 are compared below:

	Well No. 7	Well No. 8
Gas Volume	1129 MCFD	1112 MCFD
Cond. Volume	96 BPD	91 BPD
Water Volume	348 BPD	292 BPD
G/O Ratio	11,808 cuft/bbl	12,184 cuft/bbl
Cond. Color	straw	straw
Cond. Gravity	48.2 API	46.4 API
Init. Boiling Temp	112 F	120 F
Temp @ 80%	642 F	710 F
End Point Temp	760 F	760 F
Recovery	93%	87%
Residue	6%	12%

Additionally, the two wells are only 1,040 feet apart and are perforated in similar intervals in the Cotton Valley and Taylor Sand Series of the Cotton Valley.

A PVT analysis had been performed on a fluid sample taken from Well No. 7 on April 6, 2006. The sample was recombined at a reservoir temperature of 223°F and reservoir pressure of 4,364 psia. The recombined fluid was evaluated during a Constant Composition Expansion at pressures ranging from 10,000 psi down to 500 psi. A dew point was observed at 6,865 psia. The fact that the dew point pressure is higher than original reservoir pressure is indicative that either 1) there is an oil column/gas cap in the reservoir, or 2) the produced liquid is coming from some oil zones and some gas zones.

Chesapeake believes that all wells on its Crump Gas Unit in the Bethany, East (Cotton Valley) Field should be permanently classified as gas wells. There is no evidence that an oil column exists in the Cotton Valley anywhere in this area. Within a 10,000 acre area surrounding the Crump Gas Unit, there are about 85 Cotton Valley wells, none of which are classified as oil wells. There are almost 3,400 Cotton Valley gas wells in four Commission designated fields in this area. This compares to only 14 Cotton Valley wells classified as oil wells. Chesapeake believes that there is some free oil production in small amounts from some individual stringers within the gross Cotton Valley interval, skewing the G-5 results.

Chesapeake also compared the closest 17 Cotton Valley wells around the Crump Gas Unit Nos. 7 and 8. Some of these wells were completed as early as 1975 and all were classified as gas wells. Data from these wells indicate that the current producing gas-oil ratios for most wells are significantly higher now than the ratios were when the wells were initially completed. Chesapeake expects similar performance from wells on the Crump Gas Unit.

FINDINGS OF FACT

1. Notice of this hearing was given to all affected persons at least ten days prior to the date of hearing. No protests were received.
2. The Crump Gas Unit is a 666 acre lease in the Bethany, East (Cotton Valley) Field. Chesapeake has four wells completed on the Crump Unit to date: the Nos. 6, 7, 8, and 9.
3. The first two wells completed on the Unit, the No. 6 and No. 9, were classified as gas wells based on Form G-5.
4. The Crump Gas Unit No. 7 was classified as a gas well based on the filing of a compositional analysis indicating that the mole percent C_{7+} was 3.5% in the produced fluid.
5. The Crump Gas Unit No. 8 was completed in June 2006 and the data on Form G-5 did not meet the criteria for gas well classification. Chesapeake submitted a compositional analysis for this well indicating that the mole percent C_{7+} was 4.397%, but the Commission declined to administratively classify the well as a gas well.
6. The produced fluid from well Nos. 7 and 8 are very similar and the two wells are perforated similar intervals in the Cotton Valley and Taylor. The two wells are only 1,040 feet apart.
7. A PVT analysis of fluid sample taken from Well No. 7 indicated that the dew point pressure was higher than original reservoir pressure, indicating the presence of either an oil column/gas cap, or that the produced liquid is coming from some oil zones and some gas zones.
8. The evidence intimates that there is no oil column in the Bethany, East (Cotton Valley) Field anywhere in the area of the Crump Gas Unit.
 - a. Within a 10,000 acre area surrounding the Crump Gas Unit, there are about 85 Cotton Valley wells, none of which are classified as oil wells.
 - b. There are almost 3,400 Cotton Valley gas wells in four Commission designated fields in this area. This compares to only 14 Cotton Valley wells classified as oil wells.

- c. There are likely some thin, individual stringers within the gross Cotton Valley interval which produce free oil, resulting in unreliable G-5 data.
9. Production data from the closest 17 Cotton Valley wells around the Crump Gas Unit indicate that the current producing gas-oil ratios for most wells are significantly higher now than the ratios were when the wells were initially completed. Chesapeake expects similar performance from wells on the Crump Gas Unit.

CONCLUSIONS OF LAW

1. Proper notice of this hearing was issued.
2. All things have been accomplished or have occurred to give the Commission jurisdiction in this matter.
3. All wells completed on the Chesapeake Operating, Inc. - Crump Gas Unit in the Bethany, East (Cotton Valley) Field are gas wells.

RECOMMENDATION

Based on the above findings and conclusions of law, the examiner recommends that all wells on the Chesapeake Operating, Inc. - Crump Gas Unit in the Bethany, East (Cotton Valley) Field be permanently classified as gas wells.

Respectfully submitted,


Donna K. Chandler
Technical Examiner